

CARBON BRUSH LIFE

Vidyut Carbon Products Pvt. Ltd

The life of a Carbon Brush usually depends upon many factors. The Motor Designer normally plans for an average brush life of approx. **6 months** and accordingly decides the Size and Grade of the Brush. Machines subject to high current overload peaks of short duration interspersed with periods of lighter loads e.g. Traction Motors or Generators supplying to Rolling Mill Motors generally have a better brush life than those machines which run mostly at full load on Industrial Applications. Thus machines on Electrochemical Duty and such processes which entail continuous running over a period of several weeks or months at full load generally give less than average Brush life.

As a very broad general guide the Brush on D.C. Machines which are subject to peak load and light load running conditions may wear at the rate of **1.0 to 1.5 mm per thousand hours**. For Machines subject to constant full current load a wear of **2.5 to 3.0 mm** in the same time is more usual and for large Machines of the AC. Commutator type the wear may even be **5.0 mm per thousand hours**. Brush life is proportional to Current Density and in short time rated machines with high Brush Current Densities the Brush life may be very low compared to normal Industrial Machines. But the Designers some time pay for this operational advantage which the machine give.

The above figures of wear rate or the Carbon Brush life depends upon the maintenance standards adopted by the user and how accurately the Carbon Brush maintenance procedures such as correct Brush pressure, gap between Brush and the Holders, gap between Holders and Commutator, neutral axis etc. are adhered to.

In a continuous process Industry such as Paper, Steel Plants etc. where continuously operating full load condition exist and regular maintenance except by taking shut down is not possible, the life of a Carbon Brush varies from **4-6 months**. This may also vary due to fumes and/or dust around the machine.

The Power House Exciters and Turboalternator Carbon Brushes where the maintenance is of a good standard but are large machines the life of a Carbon Brush is usually **3-4 months**.

However if the maintenance is of a poor standard, the average life of a brush may be very low say from **1-3 months**.

APPROX. LIFE ON THE BASIS OF DETAILED NOTE THUS WORKS OUT AS BELOW:

AA)	REVERSING ROUGHING MILL AND FINISHING MILL MOTORS	4-6 MONTHS
BB)	NON-REVERSING ROLLING MILL MOTORS	3-4 MONTHS
CC)	GENERATORS OF MG SET USED IN ROLLING MILLS	6-8 MONTHS